

C. AMENDMENT TO DRAWING FIGURES

Figures 5, 8 and 12 have been amended to clearly show a connection between the bracket frame 222 and the fastener sleeve 270. This change is supported by originally filed claims 22-23 and 32. Annotated marked-up drawing sheets are attached to this amendment. Approval of the proposed amendment to the drawing is respectfully requested.

D. REMARKS

In the above-noted Office Action:

- Claims 1-6 were rejected under 35 U.S.C. 103(a) as being unpatentable over Mathews et al (US 5,035,637) in view of design choice, and further in view of Hendriksma et al (US 6,499,451).
- Claim 8 was rejected under 35 U.S.C. 103(a) as being unpatentable over Mathews et al. in view of design choice, further in view of Hendriksma et al (as applied to claim 1), and further in view of Payne et al (US 6,439,176).
- Claims 10, 16-17, 21, 24 and 26-27 were rejected under 35 U.S.C. 103(a) as being unpatentable over Iizuka et al (US 6,615,796) in view of Hendriksma, and further in view of Mathews and in view of design choice.
- Claims 11-15, and 19 were rejected under 35 U.S.C. 103(a) as being unpatentable over Iizuka in view of Hendriksma, further in view of Mathews and design choice (as applied to claim 10 above) and further in view of Payne.
- Claims 9 and 28-32 were allowed.
- Claims 20, 22-23 and 25 were objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Re-examination and reconsideration of the non-allowed claims are respectfully requested.

Claims 11-15, 20, 22-23, 26-27, and 31-32 were objected to because of various informalities. In most instances, Applicants agree with the Examiner and appropriate correction has been made. Paragraph [0029] has been amended to further clarify the invention.

Claim 1 was rejected over Mathews in combination with Hendriksma. Applicants respectfully submit that Mathews and Hendriksma do not anticipate, either singularly or in combination with each other, Applicants' invention as represented by claim 1.

As stated in paragraph [0005] of Applicants' application, one of the desires of Applicants' invention is to provide a method to accurately position the solenoid actuator. Accurate positioning is required due to the nature of the plunger and valve lift mechanism that this invention is best utilized with.

Mathews, as best shown in Figure 2, provides a cam cover gasket that allows for electrical leads to pass through it. The placement of the injector is best shown in Figures 1-2. The solenoid may be electrically connected to the gasket, but is not positioned by the gasket. Referring to Figures 7-11, Mathews illustrates electrical connectors that are connected to the gasket; however, the electrical connectors do not position the solenoid actuators.

In sharp contrast, as best shown in Figures 5 and 13 of Applicants' application, the solenoids are positioned by the gasket, not merely electrically connected thereto. The Examiner has added the Hendriksma reference to state that it is conventional in the art of control systems for variable activation of intake valves to utilize a plurality of electrical components of assembly 40' located outside a camshaft cover 56. Applicants agree with this statement, but desire to point out several significant differences in Hendriksma.

Hendriksma has a plurality of solenoid actuators which are outside the camshaft cover. In applicants' invention, the solenoids are placed within the camshaft cover. Hendriksma (noted in column 4, lines 1-12) requires utilization of a retainer 43. The retainer 43 is attached to the camcover 56 by a series of bolts and retainer 43 preferably includes the wire harness. The camcover gasket of Applicants' invention not only provides for electrical connection, but also positions the solenoids within the interior of the cam gasket cover. Neither Mathews or Hendriksma teaches or suggests using the cam cover gasket to locate the solenoids. The beauty and simplicity of Applicants' invention is that the solenoids can be positioned within the cam cover by simple assembly of the cam gasket to the cam head.

An inventor attempting to combine the teaching of Hendriksma with the teaching of Mathews would be lead to the prior art of utilizing a bracket within the interior of the cam gasket to position the solenoids.

With regard to claim 2, Applicants require that the bracket be metallic. Mathews does not provide a metallic bracket, but only provides a metallic or wire connector. Accordingly, Mathews does not provide a metal bracket for properly positioning and supporting a solenoid assembly within the cam cover.

Claim 8 was rejected based upon the combination of Mathews, Hendriksma and Payne. Payne is quite different than Applicants' invention. Payne brings forth a hydraulic control unit. Hydraulic control units have the distinct disadvantage of

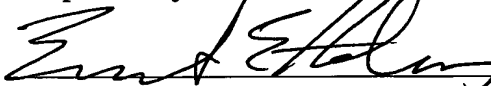
greater lag time as compared to solenoid actuating units of Applicants' invention. Referring to Figures 2-3 of Payne, the actuators (item 30) are connected to a bracket (item 84), which is in turn connected to a top cover. Therefore, placement of the flange between the top cover and the engine head does not position the actuators. Accordingly, Payne is unlike Applicants' invention.

One knowledgeable in the art would not attempt to combine Payne with Mathews and Hendriksma, since Payne is a hydraulically actuated unit, wherein Mathews and Hendriksma are primarily concerned with electrical connectors and solenoids. Regardless, the utilization of Payne with Mathews or Hendriksma would require the utilization of an extra bracket to hold the solenoid actuators, one of the things Applicants' invention seeks to avoid. Hendriksma has the solenoid actuators (items 40') outside of the valve cover (item 56). This configuration is totally outside of the desired configuration of Applicants' invention wherein the solenoid actuators are within the valve cover.

Claims 10, 24 and 26 have been rejected under the combination of Iizuka, in view of Hendriksma and further in view of Mathews. However, none of these references bring forth a gasket captured between the cover and the head of the engine wherein there are a plurality of solenoid actuators that are positioned by and connected to the gasket. Such a combination would be unwieldy, since Applicants' invention has the solenoids underneath the cover and Hendriksma has the actuators above the cover. The Mathews gasket provides for electrical connection, but it does not position the solenoid actuators. One skilled in the art utilizing Hendriksma, would attempt to place the actuators outside of the cover.

By this Amendment, Applicants have shown that the Examiner's rejections are respectfully traversed. As the application is otherwise in condition for allowance, such action is respectfully requested. If an allowance is not granted, Applicants request the inclusion of the amendments for purposes of appeal.

Respectfully submitted,



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SHOWS CONNECTION BETWEEN BRACKET FRAME AND FASTENER SLEEVE

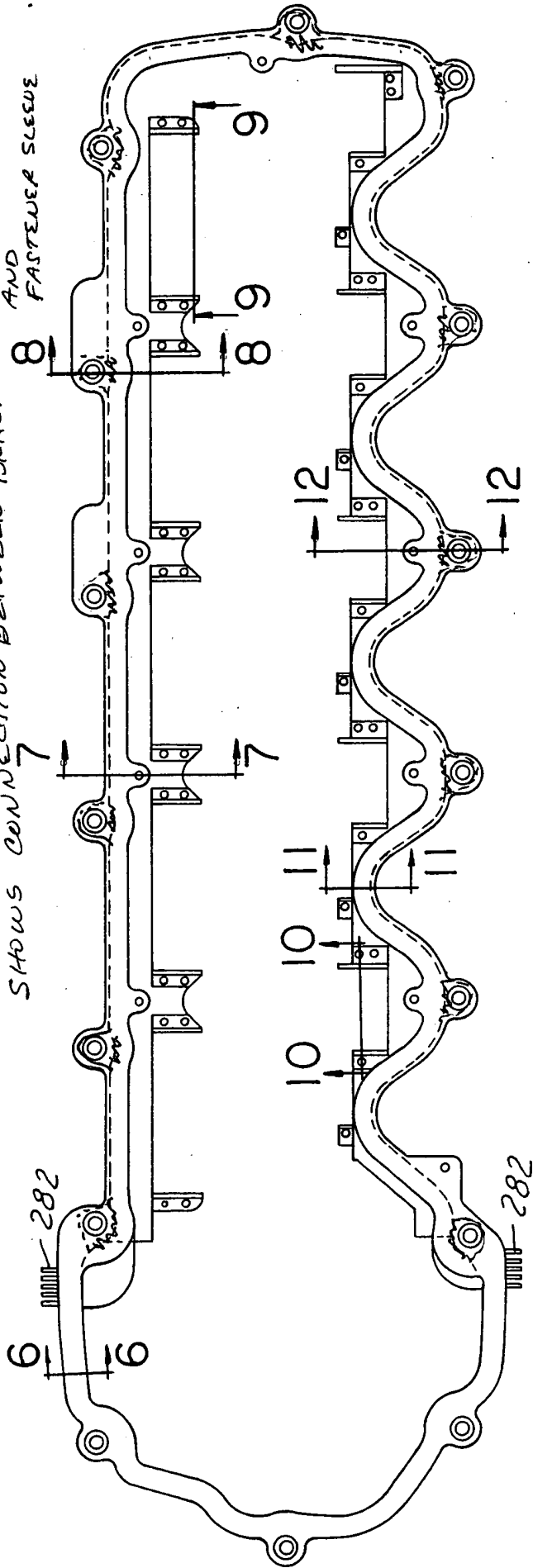


FIG. 5

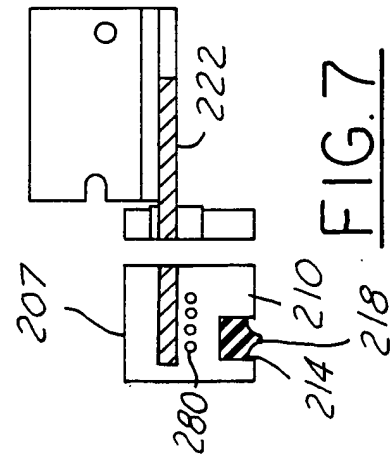


FIG. 7

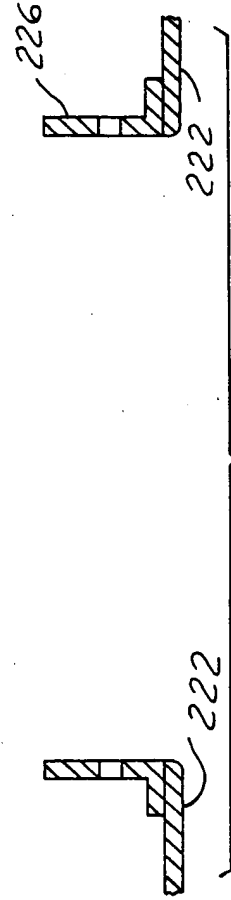


FIG. 9



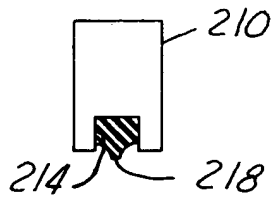


FIG. 6

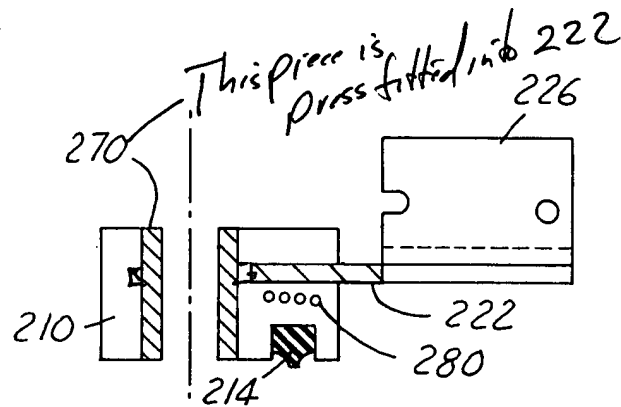


FIG. 8

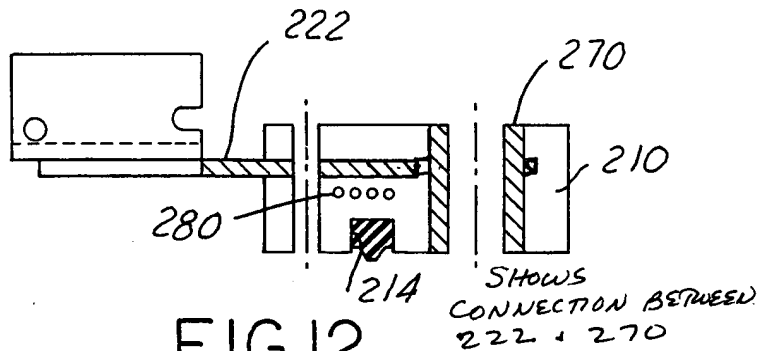


FIG. 12

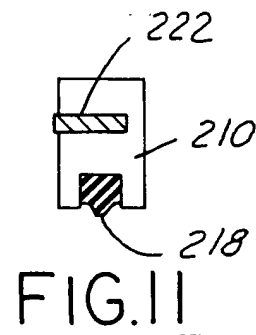


FIG. 11

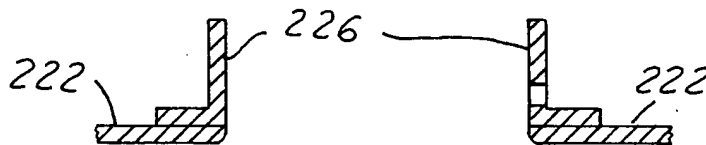


FIG. 10